

OBSCURE SCALE

Lee Townsend, Extension Entomologist

Obscure scales are important armored scales that can infest oak, hickory, walnut, maple and willow. They live on branches and twigs and use their piercing- sucking mouthparts to feed on sap. Heavy infestations can be found on stressed oaks in urban settings and may cause branch dieback. Infestations of obscure scale rarely kill a tree but can weaken it and make it more susceptible to other problems.

There is only one generation a year. Females lay eggs from June into August with peak crawler activity occurring around mid-July. This long period of activity increases the difficulty of control with a single spray. Newly hatched crawlers tend to settle under covers of mature scales, producing crusted layers on severely infested limbs. This behavior provides extra protection for the insects by preventing thorough spray coverage.

A careful inspection is needed to detect this dingy-colored scale on infested branches. The dirty gray wax covers of females, about 1/8" in diameter, blend in with the bark. Layers of these scales can build up over time. The waxy coverings can be scraped easily from the bark of branches that are several years old.

Scale control can be challenging and may need to be repeated over several seasons. This is due in part to the protection from contact insecticides provided by the waxy coverings over immobile, mature scales. Proper timing of insecticide applications is a major key to success. Applications must target newly hatched scale crawlers which are active in June and July. Crawlers are very susceptible to control measures as they move over plant surfaces to find a feeding spot. Once settled on the plant, they begin to secrete a covering and are protected by it.

Alternatives for crawler control

- Cultural control

Scales tend to thrive on stressed plants. Following a recommended fertility program and watering regime will promote plant health. However, over-fertilization favors scale buildup. If practical, improve plant sites to reduce stress and promote growth. Severely prune back heavily infested branches and protect new growth with insecticide applications.

- Insecticidal Sprays

Horticultural oils kill by suffocation or after penetrating over-wintering stages of the insect. Consequently, they may not be effective where several layers of scale coverings have accumulated.

Dormant oils are typically applied during February or March but may not be very effective against armored scales. Highly refined supreme, superior, or summer oils can be used on many trees and shrubs during the growing season. Read the product label for guidelines on plant sensitivity and temperature restriction before buying and using these products.

Insecticidal soaps are long chain fatty acids that kill susceptible insects through direct contact. Like horticultural oils, they require thorough coverage. Soaps leave no residue so repeated applications may be needed for some pests. These products may burn the foliage of sensitive plants, such as Japanese maple, so check the label for information about the plant species that you intend to treat.

A variety of natural and synthetic insecticides are labeled for use as sprays to control scale crawlers on landscape trees and shrubs. While the residual life of these products is generally longer than oils and soaps, timing, coverage, and precautions on damage to some plant species are very similar to those for oils and soaps.

- Systemic insecticides

Imidacloprid (Bayer Advanced Garden Tree & Shrub Insect Control Concentrate) is applied as a drench around the root zone of infested plants. This water soluble insecticide is taken up by the roots and transported throughout the plant where it is ingested by sap feeding insects. This provides a means of suppressing armored scales without reliance on sprays. However, it may need to be applied several weeks before crawlers are active for best results.

Representative products for scale crawler control.

| Insecticide common name* | Representative brand names |
|--------------------------|---|
| Acephate | Orthene Turf, Tree & Ornamental Spray Ortho Systemic Insect Killer |
| Azadiractin | Bon-Neem Gordon's Garden Guard Liquid Insecticide |
| Carbaryl | Sevin |
| Cyfluthrin | Bayer Advanced Garden Multi-Insect Killer Concentrate |
| Lambda-cyhalothrin | Spectracide® Triazicide® Soil & Turf Insect Killer |
| Dimethoate | Dragon Cygon 2E Systemic Insecticide |
| Esfenvalerate | Ortho Bug-B-Gon Garden & Landscape Insect Killer Concentrate |
| Malathion | Ortho Mosquito-B-Gon Tree & Shrub Spray Bonide Malathion Insect Control |
| Permethrin | Ortho Mosquito-B-Gon Tree, Shrub & Lawn Spray Spectracide® Bug Stop® Multi-Purpose Insect Control Concentrate Bonide Borer-Miner Killer |

*All insecticides have unique common names that can be found on just below the brand name on the product label. You may be able to find other brand name products for scale control that contain these active ingredients. Be sure that the product you select is labeled for the plants that you intend to spray.

Evaluating Control

The success or failure of control efforts may not be readily apparent but here are some things to check.

- Live scales should produce a liquid when mashed, dead scales will be dry and not “bleed” when crushed.
- New foliage should have a healthier appearance once the scale burden has been removed. Buds should break a little earlier than when the plant was infested and expanded leaves should have normal color and turgor.

Natural Enemies

Scale insects can be attacked by a variety of lady beetles, predatory mites, and small parasitic wasps. Lady beetle adults and larvae can be seen but mites and parasitic wasps are very difficult to see. You can conserve natural enemies by using insecticidal soaps and oils which have limited impact on beneficial species in comparison to other control alternatives.